**IN THE DRAWINGS:**

The drawing has been amended as shown on the Replacement Sheet attached hereto.

## REMARKS

In the Office Action dated January 14, 2005, the Examiner noted a duplicate use of reference numeral 8 in the figure, and correction was required. The reference numeral 8 designating the line proceeding from the control console 8 to the control device 12 should have been designated with reference character B, consistent with the description in the specification in the paragraph bridging pages 9 and 10. The drawing has been corrected to use reference character B at that location, instead of reference numeral 8.

Typographical errors in the specification were noted, which have been corrected.

Claims 6-9, 13, 15 and 16 were objected to because of a number of items enumerated by the Examiner at page 3 of the Office Action. As the Examiner may be aware, many recent decisions of the United States Court of Appeals for the Federal Circuit hold that if a claim element is narrowed for any "reason relating to patentability," the amended claim element will be afforded no range of equivalents under the doctrine of equivalents. In the past, Applicants' representative would have been agreeable to making changes in the claim language to satisfy editorial preferences on the part of the Examiner, however, in view of these decisions by the Federal Circuit, any change specifically requested by the Examiner, even a change that is solely for editorial preference, has the potential to result in a limitation of the scope of the claim, and it can be expected that a party charged with infringement of a patent that issues based on the present application would try to make that argument.

Therefore, while Applicants' representative is certainly agreeable to making necessary changes to correct typographical errors, correct grammatical errors, provide proper antecedent basis, etc., it is no longer prudent to agree to changes that do not rise to the level of a rejection under Section 112, second paragraph. Examples of such changes in the items enumerated by the Examiner at page 3 of the Office Action are changing "said slice marking" in claim 6, lines 1-2 to "the slice level marking" and changing "said examination subject" in claim 7, line 5 to "said subject." Applicants therefore respectfully decline to make those changes, however, all other changes proposed by the Examiner have been made.

Claims 1, 8 and 16 were rejected under 35 U.S.C. §102(e) as being anticipated by Ogura et al. Claims 1, 6, 8, 14 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hada in view of Nishihara et al.

Applicants note with appreciation that claims 2-5, 7, 9-13 and 15 were stated to be allowable if rewritten in independent form. The above rejections are respectfully traversed, and therefore those claims have been retained in dependent form at this time.

The method, slice level positioning device and x-ray examination device disclosed and claimed in the present application are for the purpose of obtaining an x-ray image of a selected slice (plane) of an examination subject. As discussed at pages 1 and 2 of the present specification, this is accomplished with a stationary x-ray source and detector (i.e. *not* by computed tomography involving a rotating x-ray source and detector), by operating the x-ray examination device so that body structures located only in

a defined slice plane are clearly recognizable, with all regions preceding and following the desired slice plane (in the direction of radiation propagation) being blurred. Only the structures in the desired slice layer are clearly reproduced in the resulting image.

In the method, slice positioning device, and x-ray examination device disclosed and claimed in the present application, appropriate parameters for operating the x-ray examination arrangement are automatically set so that only the desired slice is imaged, by designating the desired slice level on an optical image of the exterior of the examination subject. An operator intervenes to set the marking on the optical image at the desired location, but once the slice level is set in the optical image and is approved by the operator the parameters for obtaining an x-ray image only of that slice level are then automatically set.

The claims as originally filed used the term "slice level" in a manner consistent with the above discussion and in a manner consistent with the meaning of that term that is well understood by those of ordinary skill in the field of x-ray imaging. Nevertheless, each of the independent claims has been amended to make clear that the setting of the slice level causes the generation of an unblurred image of substantially only the slice level of the subject that has been set.

No such method or apparatus is disclosed or suggested in any of the references relied upon by the Examiner. The radiographic apparatus disclosed in the Ogura et al reference is for producing conventional x-ray images of a subject, wherein all organs at all depths of the examination

subject (in the direction of radiation propagation) appear in the x-ray image. There is no "slice" of the subject that is imaged in the apparatus disclosed in the Ogura et al reference. In comparing the teachings of Ogura et al to the subject matter disclosed and claimed in the present application, the Examiner apparently equated the term "slice" with the overall 2D x-ray image that is produced in the Ogura et al reference, however, as discussed above the term "slice" in the context of radiographic imaging has a well understood meaning, and the types of conventional x-ray images produced in the Ogura et al reference are not "slices" of the examination subject in accordance with the well-understood meaning of that term. The arrangement in the Ogura et al apparatus for positioning the x-ray tube merely adjusts the physical position of the x-ray tube relative to the patient, so that the field of view of the x-ray tube encompasses the desired region of the examination subject for which an image is to be obtained.

The Examiner cited Figures 35 and 36 of the Ogura et al reference as allegedly showing a reference image of an exterior of a subject indicating a selected slice level with a marking in the reference image, which the Examiner characterized as the dashed line in E1. There is no teaching whatsoever in the Ogura et al reference, however, that this dashed line actually appears in the reference image itself, since there is no disclosure whatsoever in the Ogura et al reference as to how such a dashed line could be mixed into the image. Does the Examiner believe that the double-headed arrow in Figures 35 and 36 also appears in the reference image? Applicants submit these are merely drawing aids to schematically illustrate the type of image analysis that

takes place in the Ogura et al apparatus. The dashed line is merely intended to represent the mid-line of the overall image, and there is no need to actually visually display such a dashed line or include it in the reference image itself. The image analysis unit "knows" the overall width of the image, and therefore "knows" where the mid-line thereof is located. Figures 35 and 36 merely show that mid-line schematically to assist in explaining the image analysis, in the same manner that the double-headed arrow is shown to assist in explaining the image analysis. Neither of those items actually exists in the reference image itself.

Therefore, not only does the Ogura et al reference fail to teach an apparatus wherein an image of a selected slice of an examination subject is obtained, but also the Ogura et al reference fails to teach including a marking designating such a slice in an image of the exterior of the examination subject. The Ogura et al reference, therefore, does not anticipate any of claims 1, 8 or 16.

The Hada reference discloses a computed tomography apparatus wherein, prior to obtaining computed tomography data, a scannogram of the examination subject is obtained, either from above the examination subject or at a side of the examination subject, using the same x-ray tube that is then used to obtain the computed tomography data. The computed tomography data are obtained, as is conventional, in a helical scan wherein the x-ray source is rotated around the examination subject, while the subject is being advanced through the x-ray beam. For obtaining the scannogram, the x-ray

tube is stationarily positioned either above or at a side of the subject to obtain a static x-ray exposure.

The Examiner has acknowledged that the Hada reference does not disclose the use of a camera for obtaining the scannogram, however, the Examiner relied on the Nishihara et al reference as allegedly providing such a teaching. The Examiner cited elements 16 through 19 in Figure 1 of the Nishihara reference as purportedly corresponding to such a "camera," however, these elements in the Nishihara et al reference are not a camera in the sense of a photographic camera, but constitute elements of a video chain wherein a video camera is used. As is well known to those of ordinary skill in the field of x-ray imaging, and as explicitly disclosed in the Nishihara et al reference, such a video chain requires the use of an x-ray image intensifier to convert the radiographic image into an optical image, which is then picked-up by the television camera. Using a heavy, bulky x-ray image intensifier in a computed tomography apparatus is physically impossible, given the high rotational speeds necessary in a computed tomography apparatus. More importantly, as noted above the camera disclosed in the Nishihara et al reference is not a camera that obtains an image of an exterior of the subject, but is a camera in a video chain that is used to process the x-ray images obtained with the x-ray image intensifier.

Equally as importantly, the concept of setting a slice level in the manner described in the claims of the present application, is incompatible with the operation of a computed tomography apparatus. The scannogram obtained in the Hada reference is simply for appropriately positioning the

patient in the scanner to ensure that projection data are obtained from the desired region (volume) of the examination subject. In a computed tomography system, however, the desired slice is selected by appropriate image reconstruction based on the projection data. Obtaining an image of a slice of an examination subject in the manner set forth in the claims of the present application, using an x-ray arrangement set to obtain an unblurred image only if the desired slice, is incompatible with the operation of a computed tomography scanner.

In summary, it would be physically impossible to combine the Hada and Nishihara et al references in the manner proposed by the Examiner, and equally as importantly the operating concepts of each of those systems are so different from each other that a person of ordinary skill in the field of x-ray imaging would have no motivation whatsoever to even conceptually attempt such a combination. Moreover, even if such a conceptual combination were attempted (for reasons unknown to the present Applicants), a method, slice positioning device, and x-ray examination device as disclosed and claimed in the present application still would not result.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is therefore respectfully requested.

Submitted by,

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